

c) Remarks

As of the outstanding office action, claims 3, 5, and 22-25 were pending. As of this response, claims 3, 5, and 22-25 are pending. The following amendments are made in this response:

Claim 25 has been amended as follows:

to replace the reference to a substituent with the term “optionally substituted by...”,

to delete any reference to P450cam mutant enzymes, and

to introduce references to mutations at positions 42, 181, 263, 264 and 354 based on table 5 on page 45 of the application.

The following objections/rejections are pending as of this office action. The rejections are addressed in turn.

1. The examiner objects to the specification because it contains an embedded web hyperlink.

2. Claims 3, 5, and 22-25 are rejected under 35 USC § 112, second paragraph.

3. Claims 3, 5, and 22-25 are rejected under 35 USC § 112, first paragraph.

4. Claims 3, 5, and 22-25 are rejected under 35 USC § 103(a), as being unpatentable over U.K. Patent GB 2 294 692 A, U.K. Patent Application GB 2 306 485 A or U.S. Patent 6,117,661 to Wong et al. (hereinafter “Wong”).

5. Claims 3, 5, and 22-25 are rejected under 35 USC § 112, second paragraph. are rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent 6,100,074 to Flitsch et al. (hereinafter “Flitsch”).

Each objection/rejection is addressed in turn.

1. Objection to Specification.

As noted above, applicants herein amend the specification to delete the reference to the web address. Accordingly, the examiner's objection has been addressed and applicants respectfully request that the examiner remove this objection.

2. Rejection of Claims 3, 5, and 22-25 under 35 USC § 112, Second Paragraph

The examiner has rejected claims 3, 5, and 22-25 under 35 USC § 112, second paragraph, for indefiniteness.

The examiner states that the metes and bounds of the terms "P450_{cam}" and "P450_{BM-3}" are unclear and states that reciting the full name of the enzyme would overcome this rejection. Because the claims, as amended, do not refer to "P450_{cam}", the rejection with respect to this term is removed. Concerning "P450_{BM-3}", Applicants respectfully respond that this term in question is not an abbreviation. This is how the enzyme is known in the art, and this term in combination with a reference to SEQ ID NO: 24 is the clearest way to refer to the enzyme, and is completely unambiguous. "BM" is derived from *Bacillus megaterium* in which the enzyme is found. However in the art one does not refer to *Bacillus magaterium* in the name of the enzyme. Accordingly, with respect to "P450_{BM-3}", applicants respectfully traverse this rejection and respectfully assert that there is no need to replace the term "P450_{BM-3}" in the claims. Reference to "P450_{BM-3}" is unambiguously clear to one of ordinary skill in the art and any amendments would likely compromise this clarity.

The Examiner also objected to the term "substituent". This has now been replaced in claim 25 with a reference to the limonene, pinene or cyclic sesquiterpene being "optionally substituted by...".

In light of the amendments and arguments made herein, applicants assert that all of the outstanding rejections under 35 USC § 112, second paragraph have been addressed and that the claims are in condition for allowance. Accordingly, applicants respectfully request that the rejections under 35 USC § 112, second paragraph be withdrawn.

3. Rejection of Claims 3, 5, and 22-25 under 35 USC § 112, First Paragraph

The examiner has rejected claims 3, 5, and 22-25 under 35 USC § 112, first paragraph, for insufficient written description and lack of enablement in the specification for the claimed invention.

In response to the rejections under §112, first paragraph, base claim 25 has been amended to refer to a mutant enzyme which only has specific defined mutations. It is believed that the amendment overcomes the rejections under §112, first paragraph for both written description and enablement. The pending claims have sufficient written description and enablement as required under § 112, first paragraph. Therefore, applicants respectfully assert that the amendments render the claims allowable under §112, first paragraph. Applicants respectfully request that the examiner withdraw this rejection.

4. and 5. Rejection of Claims 2-3, 5, and 22-25 under 35 USC § 103(a) over Wong and
Rejection of Claims 2-3, 5, and 22-25 under 35 USC § 103(a) over Flitsch

The examiner has rejected claim 3, 5, and 22-25 under 35 USC § 103(a) over Wong, and has also rejected the same claims under 35 USC § 103(a) over Flitsch. Applicants respectfully assert that the instant amendment overcome the rejection under § 103(a) over Wong and the rejection under § 103(a) over Flitsch.

The claims have been limited to use of particular P450_{BM-3} mutant enzymes. The use of such enzymes to oxidize the substrates mentioned in the claims is not disclosed or suggested in the prior art, and therefore the claimed matter is not obvious.

Applicants respectfully request that the examiner withdraw the rejection of claims 3, 5, and 22-25 under 35 USC § 103(a) over Wong, and the rejection of claims 3, 5, and 22-25 under 35 USC § 103(a) over Flitsch.

d) Conclusion

In light of the applicants' amendments and arguments, applicants assert that the pending claims are in condition for allowance. Applicants respectfully request withdrawal of the outstanding rejections and allowance of the pending claims. If any issues remain outstanding, please contact the undersigned for resolution of the same.

Applicants provide a check in the amount of \$450.00 for a two-month extension of time. Applicants believe that no other fees are associated with the filing of this response. However, if applicants are in error, the Commissioner is hereby authorized to charge any additional fees associated with this filing from Deposit Account No. 06-2375, under Order No. P02196US0/10104571 from which the undersigned is authorized to draw.

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Respectfully submitted,

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